

What is claimed is:

1. A data stream generation apparatus for sequentially coupling predetermined header bits of sequentially input data to a tail bit side of previously 5 input data and sequentially outputting data having a predetermined data length from said header bit side of said coupled data,
said data stream apparatus comprising:
 - a data outputting means for outputting said 10 predetermined data length's worth of data from said header bit side of the not yet output data and outputting data remaining after the output as feedback data when the data length of said coupled data which has not been output reaches said predetermined data length and for 15 outputting the not yet output data as said feedback data when the data length of said not yet output data does not reach said predetermined data length;
 - a data adding means for generating adjustment data having a data length of a difference between the 20 data length of said feedback data and a data length of a whole multiple of a predetermined unit data length when said input data is the predetermined data and adding the same to said tail bit side of the feedback data; and
 - a data coupling means for coupling said header 25 bit of said input data to said tail bit side of said

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feedback data and supplying the coupled data as said not yet output data to said data outputting means.

2. A data stream generation apparatus as set forth in claim 1, wherein

5 said apparatus further comprises a data length processing means for cumulatively adding the data length of said input data based on the input data length information sequentially input corresponding to said input data, subtracting said predetermined data length

10 from the cumulative data length when the cumulative data length reaches said predetermined data length, and adding the data length of said adjustment data to the cumulative data length when said input data is control data; and

15 said data output unit outputs the data of said predetermined data length when the cumulative data length of said data length processing means reaches said predetermined data length, while outputs said not yet output data as said feedback data when it does not reach said predetermined data length.

20 3. A data stream generation apparatus as set forth in claim 2, wherein said data adding means includes an adjustment data length setting means for setting an adjustment data length in accordance with the cumulative data length of said data length processing means when said input data is predetermined data,

an adjustment data generating means for generating said adjustment data in accordance with said set adjustment data length, and

5 an adding means for adding said generated adjustment data to said tail bit side of said feedback data, and

wherein data length processing means adds said set adjustment data length to said cumulative data length when said input data is predetermined data.

10 4. A data stream generation apparatus as set forth in claim 3, wherein said adjustment data length setting means sets said adjustment data length in accordance with a difference between a quotient obtained by dividing the cumulative data length of said data length processing means by said unit data length and said unit data length.

15 5. A data stream generation apparatus as set forth in claim 3, wherein said adjustment data length setting means inverts bit values of lower significant data of a predetermined number of bits from the least significant bit in the binary value of the cumulative data length of said data length processing means and sets said adjustment data length in accordance with data obtained by adding a predetermined value to the bit inverted lower significant data.

20 6. A data stream generation apparatus as set forth

in claim 3, wherein said adjustment data generating means selects one data from a plurality of predetermined data in accordance with said set adjustment data length and generates adjustment data in accordance with said
5 selected data.

7. A data stream generation apparatus as set forth in claim 3, wherein said data generating means generates data in accordance with each bit value in the binary value of said set adjustment data length for each bit,
10 selects one data from a plurality of data generated by coupling the generated data for each bit in a predetermined sequence in accordance with the bit value of at least one predetermined bit among the bits, and generates adjustment data in accordance with the selected
15 data.

8. A data stream generation apparatus as set forth in claim 2, further comprising:

a data selecting means for selecting the sequentially input variable length data or said control
20 data in accordance with a supplied selection signal and supplying said selected input data to said data coupling means; and

a data length selecting means for selecting input data length information corresponding to said
25 variable length data or said control data and supplying

said selected input data length information to said data length processing means.

9. A data stream generation apparatus as set forth in claim 8, further comprising:

5 a variable length data coupling means for coupling a plurality of variable length data each having variable length and supplying the same to said data selecting means; and

10 a data length generating means for generating input data length information of said coupled variable length data based on the input data length information corresponding to the plurality of variable length data and supplying the same to said data length selecting means.

15 10. A data stream generation apparatus for sequentially coupling predetermined header bits of sequentially input data to a tail bit side of previously input data and sequentially outputting data having a predetermined data length from said header bit side of 20 said coupled data,

25 said data stream generation apparatus comprising:

a data outputting means for outputting said predetermined data length's worth of the data from said header bit side of the not yet output data and outputting

data remaining after the output as feedback data when the
data length of said coupled data which has not been
output reaches said predetermined data length and
outputting the not yet output data as said feedback data

5 when the data length of said not yet output data does not
reach said predetermined data length;

a data adding means for generating adjustment
data having a data length of a difference between a sum
of data lengths of said input data and said feedback data
10 and the data length of a whole multiple of a
predetermined unit data length and adding the same to
said header bit side of the input predetermined data;

a data selecting means for selecting
predetermined data with said adjustment data added
15 thereto or other input data in accordance with a supplied
selection signal; and

a data coupling means for coupling said header
bit of said selected input data to said tail bit side of
said feedback data and supplying the coupled data as said
20 not yet output data to said data outputting means.

11. A data stream generation apparatus as set forth
in claim 10, wherein

said apparatus comprises a data length
processing means for cumulatively adding data lengths of
25 said input data based on said input data length

information sequentially input corresponding to said input data and subtracting said predetermined data length from said cumulative data length when the cumulative data length reaches said predetermined data length, and

5 said data output unit outputs the data of said predetermined data length when the cumulative data length of said data length processing means reaches said predetermined data length, while outputs said not yet output data as said feedback data when it does not reach
10 said predetermined data length.

12. A data stream generation apparatus as set forth in claim 11, wherein said data adding means includes

an adjustment data length setting means for setting an adjustment data length in accordance with the sum of the cumulative data length of said data length processing means and said input data length,

an adjustment data generating means for generating said adjustment data in accordance with said set adjustment data length, and

20 an adding means for adding said generated adjustment data to said header bit side of said control data.

13. A data stream generation apparatus as set forth in claim 12, wherein said adjustment data length setting means sets said adjustment data length in accordance with
25 means

a difference between a quotient obtained by dividing the cumulative data length of said data length processing means by said unit data length and said unit data length.

14. A data stream generation apparatus as set forth
5 in claim 12, wherein said adjustment data length setting means inverts bit values of lower significant data of a predetermined number of bits from the least significant bit in the binary value of the cumulative data length of said data length processing means and sets said
10 adjustment data length in accordance with data obtained by adding a predetermined value to the bit inverted lower significant data.

15. A data stream generation apparatus as set forth
in claim 12, wherein said adjustment data generating
15 means selects one data from a plurality of predetermined data in accordance with said set adjustment data length and generates adjustment data in accordance with said selected data.

16. A data stream generation apparatus as set forth
20 in claim 12, wherein said data generating means generates data in accordance with each bit value in the binary value of said set adjustment data length for each bit, selects one data from a plurality of data generated by coupling the generated data for each bit in a
25 predetermined sequence in accordance with the bit value

of at least one predetermined bit among the bits, and generates adjustment data in accordance with the selected data.

17. A data stream generation apparatus as set forth
5 in claim 12, wherein said data selecting means

selects sequentially input variable length data or said control data in accordance with said selection signal and supplying said selected input data to said data coupling means, and

10 has a data length selecting means for selecting input data length information corresponding to said variable length data or control data to which said adjustment data has been added and supplying said selected input data length information to said data
15 length processing means.

18. A data stream generation apparatus as set forth in claim 17, further comprising:

20 a variable length data coupling means for coupling a plurality of variable length data each having variable length and supplying the same to said data selecting means;

a first data length generating means for generating input data length information of said coupled variable length data based on the input data length
25 information corresponding to the plurality of variable

length data and supplying the same to said data length selecting means; and

a second data length generating means for generating input data length information of control data

5 to which said adjustment data has been added based on the set adjustment data length and supplying the same to said data length selecting means.

19. A data stream generation method for sequentially coupling predetermined header bits of sequentially input data to the tail bit side of previously input data and sequentially outputting data of the predetermined data length from said header bit side of said coupled data,

15 said data stream generation method repeating the following steps:

a data outputting step of outputting said predetermined data length's worth of data from said header bit side of the not yet output data and generating feedback data in accordance with the data remaining after 20 the output when the data length of the said coupled data which has not been output reaches said predetermined data length, or generating said feedback data in accordance with the not yet output data when the data length of said not yet output data does not reach said predetermined 25 data length;

a data adding step of generating adjustment data having the data length of the difference between the data length of said feedback data and the data length of a whole multiple of a predetermined unit data length when

- 5 said input data is predetermined data and adding the same to said tail bit side of the feedback data; and

a data coupling step of coupling said header bit of said input data to said tail bit side of said feedback data and generating the not yet output data of

- 10 said data output step.

20. A data stream generation method for sequentially coupling predetermined header bits of sequentially input data to the tail bit side of previously input data and sequentially outputting data of

- 15 a predetermined data length from said header bit side of said coupled data,

said data stream generation method repeating the following steps:

a data outputting step of outputting said

- 20 predetermined data length's worth of the data from said header bit side of the not yet output data and generating feedback data in accordance with the data remaining after the output when the data length of said coupled data which has not been output reaches said predetermined data

- 25 length and generating said feedback data in accordance

with the not yet output data when the data length of said not yet output data does not reach said predetermined data length; and

a data coupling step of generating adjustment

- 5 data having a data length of a difference between a sum of data lengths of said input data and said feedback data and the data length of a whole multiple of a predetermined unit data length, adding the same to said header bit side of the input predetermined data,
- 10 selecting predetermined data with said adjustment data added thereto or sequentially input variable length data in accordance with an input selection signal, and coupling said header bit of the selected data to said tail bit side of said feedback data.

- 15 21. A variable length encoded data stream generation apparatus for sequentially generating variable length encoded data or predetermined control data, sequentially coupling predetermined header bits of the generated data to the tail bit side of previously generated data, and sequentially outputting data of a predetermined data length from said header bit side of said coupled data,
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said variable length encoded data stream generation apparatus comprising:

- 25 a variable length encoding means for

sequentially generating variable length encoded data obtained by compressing and encoding intended data or intended control data;

a data outputting means for outputting said
5 predetermined data length's worth of data from said
header bit side of the not yet output data and outputting
data remaining after the output as feedback data when the
data length of the said coupled data which has not been
output reaches said predetermined data length, while
10 outputting the not yet output data as said feedback data
when the data length of said not yet output data does not
reach said predetermined data length;

a data adding means for generating adjustment
data having a data length of a difference between the
15 data length of said feedback data and the data length of
a whole multiple of a predetermined unit data length when
the generated data of said variable length encoding means
is said control data and adding the same to said tail bit
side of the feedback data; and

20 a data coupling means for coupling said header
bit of the generated data of said variable length
encoding means to said tail bit side of said feedback
data and supplying the coupled data as said not yet
output data to said data outputting means.

25 22. A variable length encoded data stream

generation apparatus for sequentially generating variable length encoded data or predetermined control data,
sequentially coupling predetermined header bits of the generated data to the tail bit side of the previously
5 generated data, and sequentially outputting data of the predetermined data length from said header bit side of said coupled data,

said variable length encoded data stream generation apparatus comprising:

10 a variable length encoding means for sequentially generating variable length encoded data obtained by compressing and encoding intended data or intended control data and outputting a selection signal in accordance with the generated data;

15 a data outputting means for outputting said predetermined data length's worth of data from said header bit side of the not yet output data and outputting data remaining after the output as feedback data when the data length of the said coupled data which has not been
20 output reaches said predetermined data length, while outputting the not yet output data as said feedback data when the data length of said not yet output data does not reach said predetermined data length;

a data adding means for generating adjustment
25 data having a data length of a difference between a sum

of data lengths of said input data and said feedback data and the data length of a whole multiple of a predetermined unit data length and adding the same to said header bit side of said control data;

5 a data selecting means for selecting control data with said adjustment data added thereto or said variable length encoded data in accordance with said selection signal; and

10 a data coupling means for coupling said header bit of the selected data of said data selecting means to said tail bit side of said feedback data and supplying the coupled data as said not yet output data to said data outputting means.

23. A variable length encoded data stream
15 generation method for sequentially generating variable length encoded data or predetermined control data, sequentially coupling the predetermined header bits of the generated data to the tail bit side of the previously generated data, and sequentially outputting data of a
20 predetermined data length from said header bit side of said coupled data,

 said variable length encoded data stream
generation method repeating the following steps:

 a variable length encoding step of sequentially
25 generating variable length encoded data obtained by

variable length encoding the intended data or intended control data;

a data outputting step of outputting said predetermined data length's worth of data from said header bit side of the not yet output data and generating feedback data in accordance with the data remaining after the output when the data length of the said coupled data which has not been output reaches said predetermined data length and generating said feedback data in accordance with the not yet output data when the data length of said not yet output data does not reach said predetermined data length;

a data adding step of generating adjustment data having a data length of a difference between the data length of said feedback data and the data length of a whole multiple of a predetermined unit data length when the generated data in said variable length encoding step is said control data and adding the same to said tail bit side of the feedback data; and

a data coupling step of coupling said header bit of said generated data to said tail bit side of said feedback data and generating the not yet output data of said data output step.

24. A variable length encoded data stream

25 generation method for sequentially generating variable

length encoded data or predetermined control data,
sequentially coupling predetermined header bits of the
generated data to the tail bit side of the previously
generated data, and sequentially outputting said

5 predetermined data length' worth of data from said header
bit side of said coupled data,

said variable length encoded data stream
generation method repeating the following steps:

a variable length encoding step of sequentially
10 generating variable length encoded data obtained by
variable length encoding the intended data or intended
control data and generating a selection signal in
accordance with the generated data;

a data outputting step of outputting said
15 predetermined data length's worth of data from said
header bit side of the not yet output data and generating
feedback data in accordance with the data remaining after
output when the data length of said coupled data which
has not been output reaches said predetermined data
20 length and generating said feedback data in accordance
with the not yet output data when the data length of said
not yet output data does not reach said predetermined
data length; and

a data coupling step of generating adjustment
25 data having a data length of the difference between the

sum of data lengths of said input data and said feedback data and the data length of a whole multiple of a predetermined unit data length and adding the same to said header bit side of said control data, selecting the
5 control data with said adjustment data added thereto or sequentially input variable length data in accordance with said selection signal, and coupling said header bit of the selected data to said tail bit side of said feedback data.

10 25. A camera system for sequentially generating data obtained by variable length encoding image data or predetermined control data, sequentially coupling predetermined header bits of the generated data to the tail bit side of previously generated data, and
15 sequentially outputting data of a predetermined data length from said header bit side of said coupled data,
 said camera system comprising:

 an imaging means for imaging a desired image and generating image data;

20 a variable length encoding means for sequentially generating variable length encoded data obtained by variable length encoding said generated image data or desired control data;

25 a data outputting means for outputting said predetermined data length's worth of data as output image

data from said header bit side of the not yet output data
and outputting data remaining after the output as
feedback data when the data length of the said coupled
data which has not been output reaches said predetermined
5 data length, while outputting the not yet output data as
said feedback data when the data length of said not yet
output data does not reach said predetermined data
length;

10 a data adding means for generating adjustment
data having a data length of the difference between the
data length of said feedback data and the data length of
a whole multiple of a predetermined unit data length and
adding the same to said tail bit side of the feedback
data when the generated data of said variable length
15 encoding means is said control data;

a data coupling means for coupling said header
bit of the generated data of said variable length
encoding means to said tail bit side of said feedback
data and supplying the coupled data as said not yet
20 output data to said data outputting means; and

a processing means for performing predetermined
processing with respect to the stream of said output
image data.

26. A camera system for sequentially generating
25 data obtained by variable length encoding image data or

predetermined control data, sequentially coupling predetermined header bits of the generated data to the tail bit side of previously generated data, and sequentially outputting data of a predetermined data

5 length from said header bit side of said coupled data,
said camera system comprising:

an imaging means for imaging the desired image
and generating image data;

a variable length encoding means for
10 sequentially generating variable length encoded data
obtained by variable length encoding said generated image
data or intended control data and outputting a selection
signal in accordance with the generated data;

a data outputting means for outputting said
15 predetermined data length's worth of data as output image
data from said header bit side of the not yet output data
and outputting data remaining after the output as
feedback data when the data length of said coupled data
which has not been output reaches said predetermined data
20 length, while outputting the not yet output data as said
feedback data when the data length of said not yet output
data does not reach said predetermined data length;

a data adding means for generating adjustment
data having a data length of the difference between the
25 sum of data lengths of said input data and said feedback

data and the data length of a whole multiple of a predetermined unit data length and adding the same to said header bit side of said control data;

a data selecting means for selecting control
5 data with said adjustment data added thereto or said variable length encoded data in accordance with said selection signal;

a data coupling means for coupling said header bit of the selected data of said data selecting means to
10 said tail bit side of said feedback data and supplying the coupled data as said not yet output data to said data outputting means; and

a processing means for performing predetermined processing with respect to the stream of said output
15 image data.